



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,078	09/25/2003	Robert Parlee	parlee01.005	5824

25247 7590 07/15/2008

GORDON E NELSON
PATENT ATTORNEY, PC
57 CENTRAL ST
PO BOX 782
ROWLEY, MA 01969

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
----------	--------------

1791

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

07/15/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

genelson@northshorepatents.com
mbaillie@northshorepatents.com

Office Action Summary	Application No. 10/671,078	Applicant(s) PARLEE, ROBERT	
	Examiner JEFFREY WOLLSCHLAGER	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20, 23 and 25-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-29 is/are rejected.
- 7) ☒ Claim(s) 20, 23, 30 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1791

DETAILED ACTION

It is noted for the record that Examiner Wollschlager has assumed responsibility for this application from Examiner Kuhns.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 30, 2008 has been entered.

Response to Amendment

Applicant's amendment to the claims filed April 30, 2008 has been entered. Claims 25, 26, and 28-31 are currently amended. Claims 1-19, 21, 22 and 24 have been canceled. Claims 20, 23, and 25-31 are pending and under examination. Applicant's amendment to the claims has overcome the 35 USC 112, first paragraph rejection set forth in the previous office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US 5,019,312) in view of Hwang et al. (US 5,368,804).

Regarding claim 25, Bishop teaches a method for assembling a bicycle frame wherein composite tubes are joined to form a lug (Abstract; Figures 1, 2, 4 and 5; col. 1, lines 50-68) wherein a continuous lay-up of carbon/graphite fibers and a matrix material is wrapped around the tubes at the joint (Figure 4; col. 1, lines 50-59; col. 3, lines 29-52; col. 4, lines 38-63; Figure 6) and an expandable element of a putty-like mixture of microballoons and adhesive that forms a rigid foam (i.e. a syntactic foam) is also enclosed in the mold (col. 1, lines 60-68; col. 3, line 53-col. 4, line 3; Figure 4). The composite tubes are placed within the mold and the mold is closed around the lay-up, the tubes and the expandable element (col. 2, lines 1-17; col. 4, line 63-col. 5, line 13). The resin reacts exothermically and sets while the mold is closed (col. 3, lines 29-40; col. 5, lines 11-13). The expandable element/putty-like mixture intrinsically expands as a result of the heat provided during the exothermic reaction and compacts the lay-up against the tubes due to the closed mold configuration and the position and depth of the putty-like mixture in the mold (Figure 4; Figure 6; col. 3, lines 58-68; col. 4, line 63-col. 5, line 10). While Bishop discloses that the tubes of the bicycle frame are composite tubes and further teaches that the lay-up is formed with graphite/carbon fibers, Bishop does not expressly state the tubes themselves are carbon fiber tubes.

However, Hwang et al. teach a method of molding a composite bicycle frame that employs dilatable materials (Abstract) wherein composite tubes made of carbon fibers are disclosed as being conventional (col. 1, lines 6-22 and 53-57).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have combined the teaching of Hwang et al. and Bishop and to have employed carbon fiber composite tubes in the method of Bishop, since Hwang et al. suggest carbon fiber tubes are an art recognized equivalent and suitable composite tube for bicycle frames (MPEP 2144.06-2144.07). Further, the examiner notes that since the

Art Unit: 1791

combination employs the same claimed materials in the same claimed process, the same claimed effects and physical properties (e.g. voids in the lug are prevented) are achieved by the practice of the combined method.

As to claim 26, the exothermic reaction of the setting resin applies heat to the layup, the tubes, and the mold. Since the resin is in contact with all of these components, the heat would be applied by conduction of heat generated by the exothermic reaction (col. 3, lines 35-40; col. 2, lines 1-16; col. 4, line 63-col. 5, line 10).

As to claim 29, the putty-like mixture of microballoons and adhesives is syntactic foam (col. 1, lines 60-68; col. 3, lines 53-59).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US 5,019,312) in view of Hwang et al. (US 5,368,804), as applied to claims 25, 26 and 29 above, and further in view of Calfee (US 5,116,071).

As to claim 27, the combination teaches the method of claim 25 as set forth above. Bishop does not teach the distance between the inner surface of the mold and a tube being joined decreases as the distance from the joint increases thereby forming a tapered lug.

However, Calfee teaches a method of forming a bicycle frame wherein mold sections are conically shaped such that the largest diameter is at the end where the tubes come together (i.e. the joint) (Figures 3A-3D; Figure 4; col. 4, lines 51-54).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Bishop and to have employed a conically shaped mold, as suggested by Calfee, for the purpose, as suggested by Calfee, of providing additional strength to the frame and reducing flash to be trimmed (col. 2, lines 50-62).

Art Unit: 1791

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop (US 5,019,312) in view of Hwang et al. (US 5,368,804), as applied to claims 25, 26 and 29 above, and further in view of Baron (US 4,954,209).

As to claim 28, the combination teaches the method of claim 25 as set forth above. Bishop does not teach including an expandable element by lining the mold with silicone.

However, Baron teaches a method and apparatus for producing molded articles (Abstract) wherein compaction pressure is achieved by lining a mold with a silicone material and causing the material to expand to apply a compaction pressure to the lay-up (col. 3, lines 40-50).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Bishop and to have employed a mold lined with silicone, as suggested by Baron, for the purpose of efficiently providing compaction pressure to force components of the lay-up into firm contact with each other.

Allowable Subject Matter

As previously set forth by Examiner Kuhns, claims 20 and 23, and now claims 30 and 31, which depend directly or indirectly from claim 20, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed April 30, 2008 regarding the Trimble reference have been considered, but are moot in view of the amendment to the claims. Applicant's arguments filed April 30, 2008 regarding the Bishop reference have been fully considered, but they are not

Art Unit: 1791

persuasive. Additionally, regarding claim 25, the examiner has applied the Hwang et al. reference instead of relying upon the Official Notice taken by Examiner Kuhns regarding carbon fiber bicycle tubes. Further, the amendment to the claims necessitated the new grounds of rejection set forth above for claim 27.

Applicant argues that since the method of Bishop produces flash, the halves of the mold do not completely enclose the tubes of the frame or the layup. Essentially, applicant's argument suggests that the mold of Bishop can not be considered "closed" since there is some fabric and resin that forms flash (i.e. there is some material extending beyond a mold cavity). This argument is not persuasive. As an initial matter, the examiner notes that it is not disputed that some flash is formed by the method of Bishop. However, the examiner submits that this does not in any way suggest the mold of Bishop is not "closed" under a reasonable and conventional interpretation of the word in the molding arts. For example, Bishop teaches "the two mold halves are firmly bolted or otherwise forced and secured together" and that this causes the layers 40 to be "forced into firm contact with each other" (col. 5, lines 3-10). Bishop also teaches the mold is suitable for injection molding of resin as well (col. 5, lines 56-61; col. 2, lines 1-12). The examiner submits these are teachings that the mold is "closed" under a reasonable and conventional interpretation. Further, applicant argues that the continuous wrapping is not as shown in Figure 9. This argument is not persuasive. The examiner notes that layers (40a) and (40b) of the lay-up are continuously wrapped and that this fact was also admitted in the October 23, 2006 REMARKS (page 7, second paragraph). Further, the examiner notes that claim 20 was previously indicated by Examiner Kuhns as being allowable and that the claim remains indicated as being allowable.

Applicant argues that there is no indication that the microballoon and matrix mixture reacts to the curing process any differently from the other components of the layup. This

Art Unit: 1791

argument is not persuasive. The examiner submits that the microballoon and matrix mixture does not need to react "differently from the other components of the layup" to meet the claim. The mixture does need to expand during the curing step and the expansion needs to compact the enclosed layup against the tubes. The examiner submits that the required expansion and compaction are met by the mixture of Bishop. As admitted in the May 15, 2006 REMARKS (page 8, first paragraph), the mixture of Bishop is a syntactic foam that expands with heat. In the process of Bishop, the exothermic reaction of the resin provides heat to the mixture. The mixture of Bishop is contained in the mold to a depth of one-half the dimension of the corresponding tube, is in contact with the layup, and is displaced by the tubes when the tubes are placed into the mold. As such, when the mixture of Bishop expands, it will, to some extent, compact the layup against the tubes (Figure 4; Figure 6; col. 3, lines 59-64 and col. 4, line 63-col. 5, line 10). Accordingly, the examiner submits the claims are met as set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Wollschlager/
Examiner, Art Unit 1791

July 12, 2008